

US EPA ARCHIVE DOCUMENT



R.E.D. FACTS

Heptachlor

Pesticide Reregistration

All pesticides sold or used in the United States must be registered by EPA, based on scientific studies showing that they can be used without posing unreasonable risks to people or the environment. Because of advances in scientific knowledge, the law requires that pesticides which were first registered years ago be reregistered to ensure that they meet today's more stringent standards.

In evaluating pesticides for reregistration, EPA obtains and reviews a complete set of studies from pesticide producers, showing the human health and environmental effects of each pesticide. The Agency imposes any regulatory controls that are needed to effectively manage each pesticide's risks. EPA then reregisters pesticides that can be used without posing undue hazards to human health or the environment.

When a pesticide is eligible for reregistration, EPA announces this and explains why in a Reregistration Eligibility Document, or RED. This fact sheet summarizes the information in the RED for heptachlor.

Use Profile

Heptachlor is a chlorinated hydrocarbon insecticide, presently used in the United States only to control fire ants in buried, pad-mounted electric power transformers and in underground cable television and telephone cable boxes. The end use product, a granular formulation packaged in small plastic bags, is applied by pouring the contents of the plastic bag directly into a metal or concrete enclosure, which is rarely opened again.

Regulatory History

Heptachlor was first registered in the United States in 1952 for use as a broad spectrum insecticide on many agricultural crops. Heptachlor also was used for home and garden insect control, for termite control and as a seed treatment.

In November 1974, EPA issued a Notice of Intent to Cancel all registered uses of heptachlor except those for subterranean termite control and dipping of non-food plants. Heptachlor and its metabolite, heptachlor epoxide, had been demonstrated to cause cancer and birth defects in laboratory mice and rats. They also were known to persist in soil for many years, and to bioaccumulate throughout the food chain. Most uses of heptachlor were cancelled in March 1978.

In 1989, all heptachlor tolerances (residue limits in foods) were revoked and replaced with action levels (limits set for unavoidable residues in foods resulting from environmental contamination, which are lowered as actual residue levels decline).

EPA analyzed the risks and benefits of heptachlor and six other chemicals used for termite control in 1983, and issued a Data Call-In (DCI) requiring more health and exposure data for these termiticides in 1984. EPA also required further data to support the fire ant control use of heptachlor through a Registration Standard, issued in December 1986.

Currently, five heptachlor products are registered. Only two are eligible for reregistration--a manufacturing use and an end use product for fire ant control. A third heptachlor product is registered for export only (the legality of this registration is being examined). The remaining two are termiticide products, which may not be sold or used in the U.S. pending the results of some required indoor air monitoring studies. Unless these studies demonstrate that residues cannot be detected inside treated homes, these products' conditional registrations will expire in August 1994.

Human Health Assessment

Toxicity

Heptachlor is of moderate toxicity in short term animal feeding studies, and has been placed in Toxicity Category II for this effect. (Toxicity Category I indicates the highest degree of toxicity, and Category IV the lowest.) Heptachlor is mildly irritating to the skin, and is placed in Toxicity Category IV for dermal effects.

Heptachlor is a Class B₂, probable human carcinogen, based on long term animal feeding studies in which it produced benign and malignant liver tumors in mice. Heptachlor epoxide also is a Class B₂ carcinogen, as it produces liver tumors in mice and female rats. Mutagenicity studies show that heptachlor and heptachlor epoxide affect DNA synthesis in certain human cells.

Dietary Exposure

There are no remaining food use registrations for heptachlor. Therefore, EPA is imposing no residue chemistry data requirements.

All tolerances for heptachlor and heptachlor epoxide have been converted to action levels, which will be lowered and ultimately rescinded as residues of heptachlor decline in the environment. Similarly, international Codex Maximum Residue Levels (MRLs) are established for unavoidable residues in meat, milk, poultry, eggs and vegetable crops.

Applicator Exposure

The remaining use of heptachlor, to control fire ants in underground power cable boxes, results in only negligible human exposure when the

product is used according to label directions. The label instructs the applicator, while wearing chemical-resistant gloves, to pour the contents of a 4-ounce plastic bag of granular 7% heptachlor directly into the metal or concrete cable box, and close it. Neither the applicator nor other people are likely to come into contact with heptachlor during or after this use. EPA is satisfied that the label instructions will mitigate any risk associated with the use of this product.

Human Risk Assessment

Although long term exposure to heptachlor or heptachlor epoxide through the diet could cause cancer in humans, EPA acted to mitigate this risk by canceling all registered food uses of heptachlor in the 1970s, and converting tolerances to action levels in the 1980s. The only remaining use of heptachlor, to control fire ants in underground power cable boxes, will result in minimal, short term exposure to applicators. EPA finds that the risk associated with this use is negligible, when the applicator properly follows product label directions and precautions.

Environmental Assessment

Environmental Fate

The available data indicate that heptachlor and heptachlor epoxide are persistent, immobile, and bind to soil. However, the remaining use of heptachlor in enclosed, underground power cable boxes is not expected to result in any environmental exposure. Thus, no environmental fate data are required for reregistration.

Ecological Effects

Studies available to EPA indicate that heptachlor can bioaccumulate in fish and freshwater invertebrates. Heptachlor is very highly toxic to warmwater and coldwater fish, and to freshwater invertebrates. It is highly toxic to both upland game birds and waterfowl, and is moderately toxic to mammals.

An ecological risk assessment has not been conducted for heptachlor because its remaining use is not expected to result in exposure to the environment. Risks to nontarget organisms should be negligible. However, to protect fish, aquatic invertebrates and birds, a statement must be added to the heptachlor product label cautioning the user not to contaminate water when disposing of waste water from cleaning equipment.

Additional Data Required

Some additional generic product chemistry data are required to support the reregistration of technical heptachlor. In addition, some product-specific chemistry and acute toxicity data are required. These requirements are detailed in the DCI Notice issued with this RED.

**Product Labeling
Changes Required**

The label of the heptachlor end-use fire ant control product must comply with EPA's current pesticide labeling requirements. In addition,

- þ The label must continue to include the following protective clothing statement: "Wear chemical-resistant gloves when handling or applying this product."
- þ The Environmental Hazards section of the label must include the following new statement: "This pesticide is toxic to fish, aquatic invertebrates and birds. Do not contaminate water when disposing of equipment waste water."

**Regulatory
Conclusion**

þ Certain registered uses of heptachlor are not likely to cause unreasonable adverse effects in people or the environment. Such heptachlor products, registered to control fire ants in buried, pad-mounted electric power transformers and in cable television and telephone pedestals, are eligible for reregistration.

þ These heptachlor fire ant control products will be reregistered once generic data, product-specific data and amended labeling are received and accepted by EPA.

**For More
Information**

EPA is requesting public comments on the Reregistration Eligibility Document (RED) for heptachlor during a 60-day time period, as announced in a Notice of Availability published in the Federal Register. To obtain a copy of the RED or to submit written comments, please contact the Public Response and Program Resources Branch, Field Operations Division (7506C), Office of Pesticide Programs (OPP), US EPA, Washington, DC 20460, telephone 703-305-5805.

In the future, the heptachlor RED will be available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161, telephone 703-487-4650.

For more information about heptachlor or about EPA's pesticide reregistration program, please contact the Special Review and Reregistration Division (7508W), OPP, US EPA, Washington, DC 20460, telephone 703-308-8000. For information about reregistration of individual heptachlor products, please contact the Registration Division (7505C), OPP, US EPA, Washington, DC 20460, telephone 703-305-5447.

For information about the health effects of pesticides, or for assistance in recognizing and managing pesticide poisoning symptoms, please contact the National Pesticides Telecommunications Network (NPTN). Call toll-free 1-800-858-7378, 24 hours a day, seven days a week, or Fax your inquiry to 806-743-3094.